

Supplementary Table

Accession Number ^a	Description	Species	% Coverage	TMDs ^b	Reported Function
Secretory & Blood Proteins					
1 gi 19705431	Albumin	Rat	66.4	0	Major serum protein synthesized in liver, maintains homeostasis
2 gi 20330802	Transferrin	Mouse	52.9	0	Iron binding protein in serum, synthesized in liver
3 gi 6981576	Serine protease inhibitor 2b	Rat	36.5	0	Serine protease inhibitors secreted by rat liver (SPI-1, SPI-2 and SPI-3)
4 gi 22219456	Alpha-2u globulin PGCL3	Rat	31.5	0	Cytosolic fatty-acid binding protein family also called Lipocalins
5 gi 6978497	Alpha-1 microglobulin/bikunin	Rat	22	0	BPTI/Kunitz family of serine protease inhibitors
6 gi 22219450	Alpha-2 microglobulin PGCL1	Rat	63.5	0	Cytosolic fatty-acid binding protein family , also a lipocalin
7 gi 22219456	Alpha-2u globulin PGCL5	Rat	31.5	0	Cytosolic fatty-acid binding protein family , also a lipocalin
8 gi 6978477	Fetuin-Alpha 2 HS-glycoprotein alpha 2	Rat	20.5	0	Major serum protein synthesized in liver
9 gi 6978841	Fibrinogen, gamma polypeptide	Rat	24	0	Major serum clotting factor
10 gi 12831225	Alpha(1)-inhibitor 3, variant I	Rat	22.1	1	Serine protease inhibitor synthesized in Liver.
11 gi 16933542	Fibronectin 1preproprotein	Human	3.1	0	Cell adhesion molecule- extracellular matrix synthesized in Liver
12 gi 16758348	Peroxiredoxin 5	Rat	43.3	0	Thiol-specific antioxidant protein
13 gi 6978879	Vitamin D-binding protein	Rat	30	0	Binds Vitamine D secreted by liver
14 gi 17985949	Hemoglobin, beta	Rat	82.3	0	Oxygen carrier protein in blood synthesized in reticulocytes
15 gi 7549746	Beta-2-microglobulin	Rat	37.8	1	Subunit of MHC class I receptor
16 gi 13162287	D-dopachrome tautomerase	Rat	82.2	0	Macrophage migration inhibitory factor homolog
17 gi 21245096	Stem cell derived neuronal survival protein precursor	Rat	69	0	Novel secretory molecule with neuronal survival effect
18 gi 6981684	Transthyretin -prealbumin	Rat	58.5	0	Prealbumin, amyloidosis type I
19 gi 16758014	Hemopexin	Rat	36.3	1	The predominant hyaluronidase expressed in mammalian liver
20 gi 8393024	Complement component 3	Rat	16.5	1	Complement cascade- endopeptidase inhibitor activity
21 gi 16924002	Fertility protein SP22 or CapsII	Rat	44.4	0	Secreted protein from most cells, expressed highest in epididymal fluid
Cytosolic					
1 gi 9506447	Carbonic anhydrase 3	Rat	52.3	0	Catalyzes hydration of carbon dioxide to carbonic acid
2 gi 13540663	Betaine-homocysteine methyltransferase	Rat	45.5	0	Catayzes transfer of methyl group from methyl-tetrahydrofolate to homocysteine to produce Methionine and tetrahydrofolate
3 gi 16758274	Peroxiredoxin 4	Rat	45.1	0	Precursor of thioredoxin peroxidase- antioxidant enzyme
4 gi 6754084	Glutathione S-transferase, mu 1	Mouse	29.4	0	Defense against chemical and oxidative stress
5 gi 8393502	Glutathione-S-transferase, mu 2 (Yb2)	Rat	45	0	Defense against chemical and oxidative stress
6 gi 13592152	Glutathione S-transferase, mu 3 (Yb3)	Rat	29.8	0	Defense against chemical and oxidative stress
7 gi 13928688	Glutathione-S-transferase, alpha (Ya)	Rat	38.9	0	Defense against chemical and oxidative stress
8 gi 8394328	Superoxide dismutase 1, soluble	Rat	44.2	0	Scavenges superoxide radicals by catalyzing the conversion to hydrogen peroxide and molecular oxygen
9 gi 8392920	Arginase 1	Rat	43.3	0	Urea cycle enzyme- catalyzes hydrolysis of arginine to ornithine and urea
10 gi 14269572	Endoribonuclease L-PSP	Rat	41.6	0	Heat-responsive protein 12 -14.5 kDa translational inhibitor protein
11 gi 8394009	Peptidylprolyl isomerase A (cyclophilin A)	Rat	41.5	0	Involved in protein folding, binds cyclosporin A which results in
12 gi 13928740	Regucalcin	Rat	37.1	0	Increases microsomal Ca(2+)-ATPase activity
13 gi 6996911	Argininosuccinate synthetase 1	Mouse	34	0	Urea cycle enzyme-Deficiency of argininosuccinate synthetase (ASS) causes citrullinemia
14 gi 21450291	Aldolase 2, B isoform & hypothetical protein MGC36398	Mouse	27.2	0	Glycolysis enzyme converts Fructose-bisphosphate to glyceraldehyde 3-phosphate
15 gi 12621074	Triosephosphate isomerase 1	Rat	30.1	0	Glycolysis enzyme- converts dihydroxyacetone phosphate to glyceraldehyde 3-phosphate
16 gi 11559998	Glycerol 3-phosphate dehydrogenase	Rat	24.9	0	Glycolysis enzyme- catalyzes conversion of glyceraldehyde 3-phosphate to 1,3-bisphosphoglycerate/ NAD+ dependent
17 gi 16757986	Phosphoglycerate kinase 1	Rat	25.4	0	Glycolysis enzyme- catalyzes conversion 1,3-bisphosphoglycerate to 3-Phosphoglycerate and ATP
18 gi 6978809	Enolase 1, alpha	Rat	31.6	0	Glycolysis enzyme- catlyzes conversion of 2-phosphoglycerate to phosphoenolpyruvate and water
19 gi 15100179	Malate dehydrogenase-like enzyme	Rat	24.9	0	Citric Acid Cycle enzyme- converts malate to oxaloacetate
20 gi 6978831	Fructose-1,6-bisphosphatase 1	Rat	25.9	0	Gluconeogenesis enzyme converts fructose 1,6-bisphosphate to fructose-6-phosphate
21 gi 11968066	Ferritin light chain 1	Rat	31.1	0	Iron binding protein in cytosol
22 gi 20302063	Aldo-keto reductase family 1, member D1	Rat	30.1	0	Enzyme- delta 4-3-ketosteroid-5-beta-reductase
23 gi 8393706	Lactate dehydrogenase A	Rat	23.5	0	Glycolysis enzyme, Converts pyruvate to Lactate
24 gi 18640732	Alcohol dehydrogenase (class I), alpha polypeptide	Rat	32.2	0	Enzyme that converts ethanol to acetaldehyde
25 gi 22128627	Sorbitol dehydrogenase 1	Mouse	19.9	0	Enzyme that oxidizes sorbitol and other polyols

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37	gi 6978505	Annexin V	Rat	15	0	Calcium-dependent phospholipid binding protein
38	gi 13994159	Annexin VI	Rat	10.5	0	Calcium-dependent phospholipid binding protein

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Plasma Membrane						
1	gi 6681283	Epidermal growth factor receptor	Mouse	19.7	0	Also avian erythroblastic leukemia viral(v-erb-b)oncogene
2	gi 7705290	Asialoglycoprotein receptor 1 (hepatic lectin)	Rat	63.7	1	Subunit of receptor for asialoglycoproteins
3	gi 8392926	Asialoglycoprotein receptor 2	Rat	39	1	Subunit of receptor for asialoglycoproteins
4	gi 7106309	Low density lipoprotein receptor-related protein 1-LRP	Mouse	21.7	1	Clearance receptor for lipoprotein remnants
5	gi 7657657	Transferrin receptor 2	Mouse	9.4	1	Receptor for iron bound ferritin
6	gi 6754900	5' nucleotidase	Mouse	14.2	1	GPI-linked PM enzyme that cleaves 5' nucleotides.
7	gi 16758300	Ectonucleotide pyrophosphatase/phosphodiesterase 1	Rat	12.5	1	Ecto-nucleotide pyrophosphatase/phosphodiesterase
8	gi 13591914	Aminopeptidase M; Leucine arylaminopeptidase 1	Rat	8.9	1	CD26/dipeptidyl peptidase IV, PM glycoprotein receptor for adenosine deaminase
9	gi 31981147	Leucine aminopeptidase 3	Mouse	17.3	0	Enzyme with aminopeptidase of the M17 family
10	gi 6753674	Dipeptidylpeptidase 4	Mouse	8.7	1	Enzyme with dipeptidyl aminopeptidase activity
11	gi 7709992	Basigin (Ox47 antigen or CE-9)	Rat	23.9	1	Member of the immunoglobulin superfamily involved in cell adhesion.
12	gi 11141877	Single Ig IL-1R-related molecule	Human	19.3	1	Interleukin-1, Type I, activating receptor
13	gi 19882213	Very large G protein-coupled receptor 1	Human	1.3	7	A very large, calcium-binding G-protein coupled receptor
14	gi 13786162	Cadherin 2; cadherin 2, type 1	Rat	16	1	Member of protein family that mediates calcium dependent cell
15	gi 13325066	Cadherin EGF LAG seven-pass G-type	Mouse	2.6	7	Cadherin type 3, flamingo (Drosophila) homolog
16	gi 16933557	Protocadherin 16 precursor, cadherin	Human	2.9	2	Member of the cadherin superfamily has a signal peptide, 27
17	gi 17865345	Cadherin related 23; Waltzing	Rat	1.4	2	Orthologous to the mouse 'waltzer' on chromosomal region,
18	gi 24308466	Integrin beta 3 (Cd61)	Rat	9.5	1	Member of family involved in adhesion of cells to extracellular
19	gi 10048477	Zonadhesin	Mouse	1.7	1	Cell adhesion molecule that binds ATP
20	gi 6755548	Solute carrier family 27 (fatty acid	Mouse	18	1	Transport of long chain fatty acids across the plasma membrane of
21	gi 15375322	Fc receptor, IgG, alpha chain transporter	Rat	12.3	1	An Fc receptor structurally related to MHC class I antigens
22	gi 13162304	Fatty acid amide hydrolase	Rat	40.2	1	Enzyme that degrades members of the endocannabinoid class of signaling lipids
23	gi 6978543	ATPase, Na+K+ transporting, alpha 1 subunit	Rat	8.6	10	Alpha subunit of P-type ATPase that transports Na+ and K+
24	gi 13929072	ATP-binding cassette, sub-family B (MDR/TAP), member 11	Rat	5.3	9	Bile salt export pump- member multidrug resistance protein or ABC family
25	gi 6978669	ATP-binding cassette, sub-family C (CFTR/MRP), member 2	Rat	6.5	14	Canalicular multispecific organic anion transporter; multidrug resistance associated protein 2
26	gi 22267462	ATP-binding cassette, sub-family A (ABC1), member 6	Mouse	8.7	15	Lipid exporter at hepatocyte bile front, ABCA1-multidrug resistance family
27	gi 9506561	Estrogen receptor-binding fragment-associated gene 9	Mouse	31.5	0	Estrogen-responsive cell surface antigen that inhibits cell growth
28	gi 16758878	ADP-ribosylation factor related protein 1,	Rat	22	0	ARP is a plasma membrane-associated Ras-related GTPase with remote similarity to the family of ADP-ribosylation factors
29	gi 9790165	Placental protein 6; PL-6	Mouse	15.4	8	PM protein of unknown function. Abundant in placenta
30	gi 13195658	Zinc finger like protein 1	Mouse	39	1	Predicted E3 ubiquitin ligase
31	gi 5453916	Progesterone membrane binding protein, Hpr6.6	Human	25.6	1	Putative steroid binding membrane proteins, expressed liver and kidney.
32	gi 11120720	Progesterone receptor membrane component , 25-Dx protein	Rat	47.1	2	Up-regulated in liver by 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)
33	gi 8393755	Membrane bound C2 domain containing protein, vp115	Rat	10.9	1	Ca ²⁺ -dependent lipid-binding protein
34	gi 6981550	Solute carrier family 4, member 1, anion exchange protein 1	Rat	9.2	10	Has homologies to erythrocyte Band 3 Cl-/HCO3- exchanger
35	gi 11560135	Calmodulin binding, acidic membrane protein	Rat	42.3	0	Binds calmodulin
36	gi 8393138	Chloride channel 2, CLC-2	Rat	9.9	11	Voltage gated chloride channel
37	gi 6755086	Ca2+-modulated nonselective cation channel	Mouse	3.4	13	Mutant in polycystic kidney disease
38	gi 7705459	Butyrate-induced transcript 1; hypothetical protein	Human	13.4	5	Potentiates different effects of the small GTPase Rac1
39	gi 16758640	Polyphosphatidylinositol phosphatase & SAC1	Rat	16.5	2	Enzyme that dephosphorylates phosphoinositol phosphate and functions as a suppressor of actin mutations 1
Endosomal						
1	gi 27229185	Endosomal membrane proteins, EMP70, member 1	Mouse	28.1	9	Transmembrane 9 superfamily member 1
2*	gi 18017593	Endomembrane protein 70, EMP 70,	Mouse	31.5	9	Transmembrane 9 superfamily member 2

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4	gi 8393510	Glucuronidase, beta	Rat	9.4	1	Lysosomal hydrolases -hydrolyzing O-glycosyl compounds
5	gi 6981598	Steroid sulfatase , aryl sulfatase C	Rat	13.2	2	Lysosomal hydrolase with steryl-sulfatase activity
6	gi 18093090	Lysosomal apyrase-like 1	Mouse	9.5	2	Lysosomal hydrolase with nucleoside phosphatase- magnesium ion binding
7	gi 16716397	Lysosomal apyrase-like 2	Mouse	2.8	2	Lysosomal hydrolase withn nucleoside phosphatase activity
8	gi 16758914	LIMP II lysosomal membrane protein related to CD36 antigen	Rat	18.4	2	Similar to the collagen type I receptor and thrombospondin receptor
9	gi 6680752	ATPase, H+ transporting, alpha 70 kDa subunit	Mouse	11.8	0	Lysosomal vacuolar proton pump subunit, isoforms 1 & 2
10	gi 17105370	ATPase, H+ transporting, beta 56/58 kDa subunit	Rat	16.6	0	Lysosomal vacuolar proton pump subunit
11	gi 16758754	ATPase, H+ transporting, 14 kD subunit	Rat	47.1	0	Lysosomal vacuolar proton pump subunit
12	gi 6755799	ATPase, H+ transporting, V0 subunit- isoform 2	Mouse	9	6	Lysosomal vacuolar proton pump non-catalytic accessory protein 2
13	gi 4502317	ATPase, H+ transporting, 31kD, V1 subunit E- isoform 1	Human	41.6	0	Lysosomal vacuolar proton pump 31kDa subunit
14	gi 7304909	ATPase, H+ transporting, 38kDa, V0 subunit D- isoform 1	Mouse	17.7	0	Lysosomal vacuolar proton pump 38kDa subunit
Mitochondria						
1	gi 22094075	Adenine nucleotide translocator member 5	Mouse	13.4	2	Mitochondrial solute carrier family 25
2	gi 9506411	ATP synthase subunit d	Rat	36.6	0	Subunit of mitochondrial inner membrane ATP synthase
3	gi 24233541	Cytochrome c oxidase, subunit Va	Rat	31.5	0	aa3-type cytochrome c oxidase of mitochondrial inner membrane
4	gi 18426866	Acetyl-Coenzyme A acyltransferase 2	Rat	30	0	Mitochondrial 3-oxoacyl-Coenzyme A thiolase
5	gi 21704230	Electron transferring flavoprotein, alpha polypeptide; Alpha-ETF	Mouse	19.5	0	An obligatory electron acceptor for several dehydrogenases located in the mitochondrial matrix
Peroxisomes						
1	gi 6978607	Catalase	Rat	34	0	Enzyme uses H2O2 to oxidize a variety of substrates
2	gi 20127395	Urate oxidase 2; uricase	Rat	30.4	0	Enzyme with oxidoreductase activity
Lipid Synthesis & Metabolism						
1	gi 6978825	Fatty acid binding protein 1, liver	Rat	58.3	0	Monomeric binding protein for free fatty acids
2	gi 6981424	Prosaposin- sphingolipid hydrolase activator	Rat	28.9	0	Sulfatide/GM1 activator
3	gi 7242183	Paraoxonase 1	Mouse	23.1	0	HDL-associated enzyme that hydrolyze oxidized phospholipids
4	gi 6679419	Paraoxonase 3	Mouse	21.2	0	HDL-associated enzyme that hydrolyze oxidized phospholipids
5	gi 8394158	Fatty acid synthase	Rat	5.5	0	Fatty acid Coenzyme A ligase
6	gi 20301954	Apolipoprotein E	Rat	22.5	0	Apo protein associated with VLDL and HDL in rat
7	gi 4885409	High density lipoprotein binding protein; vigilin	Human	13.1	0	Binds HDL at PM
8	gi 11276083	Long-chain fatty-acid-coenzyme A ligase 1	Human	8.9	1	Activation of long-chain fatty acids for both synthesis & degradation
9	gi 8393910	Phosphatidylethanolamine binding protein	Rat	70.6	0	Monomeric binding protein for PE- ATP dependent
Molecular Chaperones						
1	gi 11612489	Heat shock 70kD protein 5 (glucose-	Mouse	62.3	0	Hsp 70 superfamily, molecular chaperones GRP78/BiP/KAR2
2	gi 6753304	Heat shock protein 47, member 1	Mouse	34.8	0	Collagen binding protein 1; serine (or cysteine) proteinase inhibitor,
3	gi 11560030	protein kinase inhibitor p58, DnaJ-class molecular chaperone	Mouse	25	0	has C-terminal Zn finger domain
Cytoskeleton						
1	gi 9506371	Actin alpha 1	Rat	24.7	0	Skeletal muscle actin
2	gi 13592133	Actin beta cytoplasmic	Rat	36	0	Actin cytoskeleton of all cells
3	gi 6981236	Myosin, heavy polypeptide 9, non-muscle	Rat	18.8	0	Myosin class II heavy chain
4	gi 8393781	Myosin regulatory light chain	Rat	44.2	0	Mammalian myosin regulatory light chain
5	gi 17986258	Non-muscle myosin alkali light chain isoform 1	Human	23.8	0	Also in smooth muscle- EF-hand protein superfamily
6	gi 13928704	Myosin heavy chain 11	Rat	3.7	0	Nonmuscle myosin heavy chain-B
7	gi 6755809	Talin	Mouse	5.2	0	Actin binding protein prominent at focal adhesions
8	gi 13624297	Ankyrin 1, erythroid	Mouse	6.6	1	Protein that attaches the spectrin cytoskeleton to the RBC membrane
9	gi 4503745	Filamin 1 (actin-binding protein-280)	Human	6.1	0	Actin-binding protein-280 kD

Supplementary Table

4	gi 21245120	Putative protein phosphatase type 2C	Human	27.6	0	Serine/threonine phosphatases, family 2C catalytic domain
Ribosome- 40S subunit						
1	gi 15055539	Ribosomal protein S2	Human	22.5	0	Ribosomal subunit
2	gi 8394221	Ribosomal protein S3a	Rat	22	0	Ribosomal subunit
3	gi 4506725	Ribosomal protein S4	Human	22.8	0	Ribosomal subunit
4	gi 8394224	Ribosomal protein S6	Rat	10	0	Ribosomal subunit
5	gi 4506741	Ribosomal protein S7	Human	25.8	0	Ribosomal subunit
6	gi 14277700	Ribosomal protein S12	Human	55.3	0	Ribosomal subunit
7	gi 13386034	Ribosomal protein S13	Mouse	27.8	0	Ribosomal subunit
8	gi 8394212	Ribosomal protein S15	Rat	30.3	0	Ribosomal subunit
9	gi 4506693	Ribosomal protein S17	Human	45.2	0	Ribosomal subunit
10	gi 13195690	Ribosomal protein S27a	Mouse	40.4	0	Ribosomal subunit
11	gi 8393693	40S ribosomal protein SA (P40), Laminin	Rat	33.6	0	Ribosomal subunit
Ribosome-60S subunit						
12	gi 4506649	Ribosomal protein L3	Human	14.9	0	Ribosomal subunit
13	gi 11968086	Ribosomal protein L4	Rat	23.3	0	Ribosomal subunit
14	gi 7305443	Ribosomal protein L7a	Mouse	23.3	0	Ribosomal subunit
15	gi 6755358	Ribosomal protein L8	Mouse	37	0	Ribosomal subunit
16	gi 15431303	Ribosomal protein L9	Human	22.9	0	Ribosomal subunit
17	gi 4506617	Ribosomal protein L17	Human	38.6	0	Ribosomal subunit
18	gi 4506645	Ribosomal protein L38	Human	35.7	0	Ribosomal subunit
19	gi 13385524	Ribosomal protein, large P2	Mouse	49.6	0	Ribosomal subunit

^a National Center for Biotechnology Information (NCBI) Accession Number

^b Prediction of transmembrane domains using HMMTOP (Version 2.0). The number represents the number of predicted transmembrane domains and the 'in' and 'out' represent the predicted localization of the N-terminus.

* Arginine dimethylated (refer to Table 3)